CORRESPONDENCE

Measurement of optic disc size

EDITOR,—Garway-Heath et al described a “keratometry and ametropia” method to correct measurements of optic disc size for ocular magnification.1 The new method implies that the refraction, the power of the lens, and the power of the cornea are all independent (uncorrelated) variables. Table 2 on page 644 (Summary of ocular biometry) clearly demonstrates that this is not always the case; in fact, the variance of the lens power was almost the same as the variance of the total power of the eye. The explanation has to be that the power of the lens and cornea were negatively correlated. Measurements of the corneal curvature were therefore of little use for their purpose. Garway-Heath et al noted that the improvement over the use of uncorrected measurements was moderate, but they failed to draw the obvious conclusion: if correction is necessary, and correction based on spectacle refraction is considered unsatisfactory, the term [(w/n).F1.FL] in this group with relatively constant power in this group with relatively constant axial length.

There is a significant negative correlation (% = 0.26, p <0.000) between lens and corneal power in this group with relatively constant axial length. This modifying effect of axial length accounts for the lack of correlation between corneal power and lens power.

Finally, Bengtsson states that we failed to draw the obvious conclusion that ocular magnification correction based on axial length measurement is the only alternative to less satisfactory methods. In our recommendations at the end of the paper, we state that the axial length method should be used in preference to methods that rely on keratometry and ametropia. We agree with Bengtsson that this is quite feasible these days, with ultrasound biometers readily available in most ophthalmological units. We would urge manufacturers of optic nerve head imaging instruments to include the facility to make corrections on the basis of axial length. The advantage of the new keratometry and ametropia method reported in our paper is that it has little systematic bias with respect to other methods, and is therefore preferable to the other methods when axial length is not known.

D F GARWAY-HEATH
R A HITCHINGS

Glaucoma Unit, Moorfields Eye Hospital, London EC1V 2PD

Reply

EDITOR,—Bengtsson raises an interesting question about the nature of the complex interaction between the ocular refractive components. He is correct in stating that the new “keratometry and ametropia” method to correct for ocular magnification assumes that the power of the lens and the power of the cornea are independent (uncorrelated). Linear regression analysis of data pooled from our three patient groups (209 eyes) confirms this (Fig 1, significance of regression p = 0.21) and the finding is consistent with previous reports.2 The power of the lens and the power of the cornea are also uncorrelated to refractive error.

The refractive power of the eye depends on the refractive power of the cornea, the equivalent power of the crystalline lens, and w/n is a function of the distance of the crystalline lens from the cornea.3 If two random variables are added to produce an outcome, then the outcome of the variance is the sum of the variance of those variables if they are independent (uncorrelated) variables. Table 2 on page 644 (Summary of ocular biometry) clearly demonstrates that this is not always the case; in fact, the variance of the lens power was almost the same as the variance of the total power of the eye. The explanation has to be that the power of the lens and cornea were negatively correlated. Measurements of the corneal curvature were therefore of little use for their purpose. Garway-Heath et al noted that the improvement over the use of uncorrected measurements was moderate, but they failed to draw the obvious conclusion: if correction is necessary, and correction based on spectacle refraction is considered unsatisfactory, the term [(w/n).F1.FL] in this group with relatively constant power in this group with relatively constant axial length.

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Elevated serum levels of soluble ICAM-1 in uveitis patients predict underlying systemic disease

EDITOR,—Recent research has shown that cell adhesion molecules are integral to the homing and migration of leucocytes into areas of inflammation. Soluble forms of cell adhesion molecules may be detected in the sera after shedding from activated vascular endothelium. Increased levels of soluble ICAM-1 have been found in the serum of patients with a number of autoimmune and inflammatory disorders including uveitis.1 2

We hypothesised that circulating levels of cell adhesion molecules should be higher in patients with uveitis associated with an underlying systemic disease, where there are greater amounts of activated vascular endothelium. We therefore compared the sICAM-1 levels in the sera of patients with uveitis patients with systemic disease with uveitis patients with disease limited to the eye and to normal controls. Sera were collected from 19 patients with active uveitis and from 15 age and sex matched controls and stored at −70°C. Recorded information included medical history, physical and ophthalmological examination, and diagnostic tests. Soluble ICAM-1 levels in the sera were measured at the same time using ELISA (Bender MedSystems, Vienna, Austria).

Patient characteristics including age, sex, and diagnosis are listed in Table 1. There was no statistically significant difference between patients with uveitis and controls. Ten of the 19 patients had uveitis without associated underlying systemic disease. Six of these patients had idiopathic retinal vasculitis and four had birdshot retinochoroidopathy. Nine of the 19 patients with uveitis had an underlying systemic disease. Six patients had Behçet’s disease and three patients had biopsy proven sarcoidosis. At the time sera were drawn, all uveitis patients had active ocular inflammation.
Our data show that levels of sICAM-1 were higher in the sera of patients with uveitis associated with an underlying systemic disease. In contrast, Zaman et al reported that patients with accompanying systemic disease had similar sICAM-1 levels to those with isolated ocular disease.5 Our study showed no significant difference in sICAM-1 levels in patients receiving or not receiving systemic anti-inflammatory medications. Droogan et al similarly reported that methylprednisolone did not affect sICAM-1 levels in patients with multiple sclerosis.6 Therefore, it is unclear whether sICAM-1 levels could be used to assess or predict therapeutic effects. In summary, our data suggest that elevated sICAM-1 levels in the sera of patients with uveitis may predict the presence of an underlying systemic disease and may aid in the diagnostic evaluation of these patients.

SCOTT M WHITCUP
BARBARA P VISTICCA
M TERESA MAGONE
SHER R GEORGE

National Eye Institute, National Institutes of Health, Bethesda, MD, USA.

Correspondence to: Scott M Whitcup, MD, National Eye Institute, 10 Center Drive, Bldg 10, Room 10N 202, Bethesda, MD 20892-1858, USA.

Do patients with age related maculopathy and cataract benefit from cataract surgery?

Editor—We were interested to read Shuttleworth and colleagues’ recent paper on the benefit of cataract surgery on patients with age related macular degeneration (ARMD).7 The article suggested that the prognosis of patients with ARMD after cataract extraction was not as poor as had been previously thought and that more than two thirds of patients benefit from surgery and consider the procedure worthwhile.

Previous research has suggested that cataract surgery may increase the progression of ARMD. Van de Schaft et al reported an increased prevalence of disseminated macular degeneration in postmortem pseudophakic eyes with IOL implants. The Beaver Dam Eye Study8 indicated a statistically significant relation between cataract surgery at baseline and the incidence and progression of disciform ARMD. Pollack et al9 reported a 19% increase in progression following surgery on the first eye of patients with moderate, bilateral ARMD. In a further study, they reported an even higher incidence of progression (24%) when the second eyes of patients with previous uneventful postoperative maculopatich course were operated on.

In 1997, we performed a pilot study to assess the feasibility of a major prospective study comparing the progression of ARMD on patients undergoing cataract surgery, with age matched controls. A quality of life questionnaire was administered before and after surgery to a group of patients (n=23) diagnosed with ARMD, and their case notes reviewed retrospectively for visual acuity, simple grading of ARMD, and status of fellow eye. Thirteen patients had mild dry ARMD, seven had moderate dry ARMD, two had severe dry, and one had severe wet ARMD at the time of surgery. Visual acuity (classified into four categories—less than 6/60; 6/60–6/65; 6/24 to 6/18; and 6/12 to 6/6) improved in 18 patients, remained the same in three, and deteriorated in two patients. The poor visual outcome of the five patients whose eyesight did not improve was directly attributable to their ARMD and not to other ocular conditions. Both patients whose visual acuity declined had moderate, dry ARMD.

When quality of life measures were considered two areas showed significant change. Before surgery only 16% of patients reported that they were satisfied with their vision and 84% were dissatisfied. Following surgery 71% of patients were satisfied with their vision and only 29% were dissatisfied. Visual disability was assessed using the VF-14,10 a widely used questionnaire of patient functional impairment designed for use in cataract studies, and the mean score increased from 54% to 73%.

The rate of ARMD reported in these studies, although widely different, is still higher than would be expected by the natural course of the disease over the same period.1 One of the variation in the reported incidence and progression may be attributed to study design. Shuttleworth et al’s study was retrospective, with information gathered from case notes and a questionnaire, and included patients with all forms of ARMD. Pollack et al’s study was prospective and had strict inclusion criteria—only patients with moderate ARMD were selected. It is possible that the patients included in Pollack et al’s study were at a greater risk of progression, as all the patients had an intermediate form of the disease, which may still have been active. Surgery may provoke an inflammatory reaction or mechanical trauma that speeds up the degenerative process or triggers a more severe response.

These studies suggest that there is a specific group of patients who are at greatest risk of ARMD progression following surgery, and it is this group of patients that we...
must try to identify for better assessment, follow up, and documentation of the disease.

At present, we are conducting a prospective case control study, funded by the Gift of Thomas Pocklington, that aims to determine the effects of cataract surgery on ARM progression. We hope that it will yield valuable information enabling clinicians to assess the quality of life improvement and risk progression of ARM in our increasing elderly population.

ANA MARIE AMBRECHT
CATHERINE FINDLAY
PETER ASPINALL
BHAI DHILLON
Visual Impairment Research Group, Princess Anne’s
Eye Pavilion, Chalmers Street, Edinburgh EH3 9HA

Reply

EDITOR—We thank Ambrecht et al for their interest in our paper. They raise a number of interesting points.

We are aware of the evidence within the ophthalmic literature regarding the effect of cataract surgery upon the progression of ARM.

Although epidemiological evidence is suggestive of an association between cataract surgery and progression of age-related maculopathy, the Rotterdam Study [abstract]. Invest Ophthalmol Vis Sci 1997; 38:S472.


We are aware of the increased prevalence of disciform macular degeneration after cataract extraction with implantation of an intracapsular lens. Br J Ophthalmol 1994; 78:441–5.


Postmortem studies have also provided supportive data, however, van der Schaft et al make the point that the best assessment of the changes that occur after cataract extraction is to compare the operated eye with the changes that occur after cataract surgery and also to identify those patients most at risk of disease progression.

We suggest that for the present time cataract surgery should not be denied to any patient on the grounds that their ARM may progress. Indeed, on the basis of our study we conclude that the benefits considerably outweigh the risks.

G N SHUTTLESWORTH
E A LUHIISHI
R A HARRAD
Bristol Eye Hospital, Lower Maudlin Street,
Bristol BS1 2LX

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The Pocket Book of Ophthalmology is a textbook primarily aimed at undergraduates and general practitioners. It has been devised to fit easily into a pocket and to provide a brief overview of ophthalmology that might be encountered in an outpatient or primary care setting. Although there are many small books aimed at such an audience, few are as easily portable and none include that elusive pinhole occluder that is freely provided. Also, although not explicitly stated, the costs of this book appear to have been subsidised by the pharmaceutical industry who are perhaps trying to indoctrinate future members of the medical profession at an earlier stage than might be thought decent. Morals aside, does this book meet its objectives?

The core of the book is divided into three sections: brief notes—applied “anatomy and physiology”, “conditions”, and “topics”. The section on applied anatomy and physiology is clear and to the point providing adequate explanation for the novice. In the section on conditions diseases are arranged alphabetically and succinctly which is good for easy reference but might encourage didactic learning without thought to disease processes or systematic involvement. The section on topics gives a brief overview of ophthalmic assessment, optics, and therapy. This section is varied and interesting, including topics on such wide ranging subjects as ageing, the problems of visual acuity testing in children, and the use of lasers in ophthalmic practice. Finally there is a short appendix of well chosen diagrams.

This book does not aim to be a comprehensive textbook but sees itself as a guide to ophthalmology and as a revision aid. Its physical size is one of its main attributes but its contents are perhaps not sufficient for the entire needs of most medical students or general practitioners. Its role is therefore as an adjunct for the interested student or practitioner and in that setting it more than adequately meets its objectives.


The first author of this interesting volume is renowned within the ophthalmological community for his unique approach to ophthalmology. He was a pioneer in the early days of intraocular lens implantation with the development of the first lens, but more importantly he is widely known for his studies of the anatomy of the vitreous gel, particularly what he terms the “cisternal anatomy”. Most vitreoretinal surgeons will appreciate that the elusive gel does indeed have a particular anatomical structure and indeed older anatomists describe a variety of spaces such as Berger’s space, the canal of Petti, and other features of the vitreous gel. Jan Worst has added further to this knowledge. His work has been founded on the use of coloured dyes injected into the various compartments of the vitreous to identify their features. Some of the spaces have been named after him, such as the Worst premacular bursa.

This volume is a culmination of many years of work and contains a remarkable set of data which will not be repeated elsewhere. Vitreoretinal surgeons, and indeed all who are interested in the ocular physiology and anatomy and, in particular, vitreous pathology should read this book. It is organised in a series of chapters detailing the cisternal anatomy, function of the cisternal anatomy, and the role of the anatomy of the vitreous. This is followed by an interesting chapter on the decompartimentalisation concept in relation to cataract surgery which is written in the context of intracapsular and extracapsular surgery. This particular chapter would have benefited from an evaluation of the compartments of the vitreous in relation to phacoemulsification techniques for cataract extraction since the special forces induced on the vitreous structure during...
phacoemulsification within a closed compartment are likely to have major significance.

The last three chapters deal with aspects of vitreous pathology in relation to cystoid macular oedema, rhegmatogenous retinal detachment, and the vitreous in diabetic retinopathy; these are interesting review chapters but are somewhat out of date.

The most interesting feature of the book is a false compartment at the end which contains a stereo viewing set and series of superb slides which are taken from Jan Worst's personal collection. These slides beautifully illustrate all the aspects of the anatomy and pathology of the vitreous which Dr Worst and his co-author Dr Los wish to draw to our attention. In this respect they have been outstandingly successful and more often than not they have been quite convincing.

JOHN V FORRESTER

NOTICES

Primary Eye Care

The latest issue of the Community Eye Health (no 26) discusses the importance of primary eye care, particularly in the developing world. For further information please contact Community Eye Health, International Centre for Eye Health, Institute of Ophthalmology, 11–43 Bath Street, London EC1V 9EL. (Tel: (44) 207 171 2500; fax: (44) 207 171 2507; email: eyeresource@ucl.ac.uk) Annual subscription £25. Free to workers in developing countries.

Residents’ Foreign Exchange Programme

Any resident interested in spending a period of up to one month in departments of ophthalmology in the Netherlands, Finland, Ireland, Germany, Denmark, France, Austria, or Portugal should apply to: Mr Robert Acheson, Secretary of the Foreign Exchange Committee, European Board of Ophthalmology, Institute of Ophthalmology, University College Dublin, 60 Eccles Street, Dublin 7, Ireland.

Office of Continuing Medical Education

The 21st Annual Wilmer Institute’s Current Concepts in Ophthalmology will be held on 4–9 February 1999 at the Hyatt Regency Cerromar Beach Hotel, Dorado, Puerto Rico. Further details: Program Coordinator, Johns Hopkins Medical Institutions, Office of Continuing Medical Education, Turner 20/720 Rutland Avenue, Baltimore, MD 21205, USA. (Tel: (410) 955-2959; fax: (410) 614-8613; email: cmenet@som.jhu.edu)

Ophthalmological Clinic, University of Creteil

An international symposium on the macula will be held on 26–27 March 1999 at the Ophthalmological Clinic, University of Creteil. Further details: Professor G Soubrane, Chef de Service, Clinique Ophthalmologique Universitaire de Creteil, Centre Hospitalier Intercommunal, 40 Avenue de Verdun, 94010 Creteil, France. Fax: 01 45 17 52 27.

Leonhard Klein Award 1999

The Leonhard Klein Award 1999, valued at DM30 000, will be given for innovative, scientific works in the field of development and application of microsurgical instruments and microsurgical operating techniques. It can be conferred on an individual as well as a group of researchers. The work must be submitted in either English or German by 31 March 1999. Further details: Stifterverband für die Deutsche Wissenschaft eV, Herrn Peter Beck, Postfach 16 44 60, D-45224 Essen, Germany.

Ophthalmological Clinic, University of Creteil

An international symposium on the macula will be held on 1–2 October 1999 at the Ophthalmological Clinic, University of Creteil. Further details: Professor G Soubrane, Chef de Service, Clinique Ophthalmologique Universitaire de Creteil, Centre Hospitalier Intercommunal, 40 Avenue de Verdun, 94010 Creteil, France. Fax: 01 45 17 52 27.

Jules François Prize

The 2000 Jules François Prize of $100 000 for scientific research in ophthalmology will be awarded to a young scientist who has made an important contribution to ophthalmology. All topics in the field of fundamental and/or clinical research in ophthalmology will be considered. The application should be sent jointly with a curriculum vitae, the list of all publications, and three copies of the candidate’s 10 most relevant publications to Jules François Foundation Secretary, Professor Dr M Hansens, Dienst Oogheelkunde, de Pintelaan 185, B-9000 Gent, Belgium. Deadline for applications 31 December 1999.

Correction

An error occurred in the article by Levy et al that appeared in the October issue of the BJO (1998;82:1154–8).

The sentence concerning the conclusion in the abstract was wrong. It should read: Conclusion—Integration of neoadjuvant chemotherapy and combined treatment with carboplatin and diode laser into the therapeutic armamentarium for retinoblastoma has enabled us to limit the indications for more aggressive treatments such as enucleation and external beam radiation.

We apologise for this error.